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## Safety Data Sheet

### 1 IDENTIFICATION

#### Product identifier

Trade name: WELDbraze® Soldering Flux

#### Other means of identification:

SKU # WFS100/WFS1L



#### Recommended use and restriction on use

**Recommended use:** A Flux used for cleaning prior to soft soldering.

#### Restrictions on use:

#### Manufacturer/Importer/Supplier/Distributor information

##### Importer:

NEW ZEALAND  
Global Welding Supplies Ltd. (GWS)  
13 Patiki Road, Avondale, Auckland  
New Zealand 1026  
+64 9 828 9888

**Safety Data Sheet Questions:** [sales@gwsnz.co.nz](mailto:sales@gwsnz.co.nz)

**Website:** <http://www.globalweldingsupplies.co.nz>

**New Zealand National Poisons Centre/Helpline (24 hours) 0800 POISON (0800 764 766)**  
**Fire Service - Ambulance – 111**

### 2 HAZARD(S) IDENTIFICATION

#### GHS classification of the substance/mixture.

Classified according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

#### Classification of the substance or mixture

The product is classified as hazardous according to the Globally Harmonized System (GHS)

**GHS Classification(s)** Toxic to Reproduction: Category 2  
Acute Toxicity: Oral: Category 4  
Acute Toxicity: Dermal: Category 4  
Acute Toxicity: Inhalation: Category 4

#### Label elements

**Signal word** WARNING

#### Hazard pictograms



GHS07



GHS08

**Hazard Statement(s)**

- H302** Harmful if swallowed.
- H312** Harmful in contact with skin.
- H332** Harmful if inhaled.
- H315** Causes skin irritation.
- H319** Causes serious eye irritation.
- H360** May damage fertility or the unborn child.

**Precautionary Statement(s):**

- P201** Obtain special instructions before use.
- P202** Do not handle until all safety precautions have been read and understood.
- P261** Avoid breathing dust.
- P264** Wash thoroughly after handling.
- P270** Do not eat, drink or smoke when using this product.
- P280** Wear protective gloves/protective clothing/eye protection/face protection.

**Response statement(s):**

- P305 + P351 + P338.** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P304 + P352** IF ON SKIN: Wash with plenty of water.
- P308 + P313.** IF exposed or concerned: **Get medical advice/ attention**
- P330** Rinse mouth.
- P362 + P364** Take off contaminated clothing and wash it before reuse.

**Storage Statement(s):** Store Locked Up

**Disposal Statement(s):** Dispose of contents/container in accordance with relevant regulations.

**Other Hazards** No information provided

**Additional information:**

Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. Very toxic to aquatic life with long lasting effects. Toxic to terrestrial vertebrates. May be corrosive to metals.

**Other hazards which do not result in GHS classification:**

Keep out of reach of children. Read label before use. Wear protective gloves/clothing/eyewear/face gear. Do not eat, drink or smoke when using product. Wash hands thoroughly after handling. Keep only in the original container. Store in resistant container with a resistant inner liner. Store locked up. Avoid release in the environment. Absorb spillage to prevent material damage. Collect and dispose of spillage properly.

**3 Composition/information on ingredients**

**Chemical characterization: Mixtures**

**Description:** Mixture: consisting of the following components.

Sustances/Mixtures			
CAS	HSR	Ingredient	Proportion
7646-85-7	1554	Zinc Chloride	40%
7647-01-0	1566	Hydrochloric Acid	<5%
		Low Hazard Salts	5-15%
		Water	remaining

**Additional information:**

For the listed ingredient(s), the identity and exact percentage(s) are being withheld as a trade secret.

**Composition comments:**

The term "Dangerous Components" should be interpreted as a term defined in Hazard Communication standards and does not necessarily imply the existence of a hazard. The product may contain additional nonhazardous ingredients or may form additional compounds under the condition of use. Refer to Sections 2 and 8 for more information.

**4 First-aid measures****Description of first aid measures**

**General information:** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

**Inhalation:**

Remove person from contaminated area to fresh air. Apply artificial respiration if needed. Call a physician if symptoms develop or persist.

**Skin contact:**

Remove contaminated clothes and rinse skin thoroughly with water for at least 15 minutes. A 2.5 pct calcium gluconate gel applied topically after skin has been thoroughly washed will help reduce severity of symptoms. Get medical attention if irritation develops and persists.

**Eye contact:**

Immediately rinse eyes with water. Remove any contact lenses, and continue flushing eyes with running water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eye and lids with water.

**Get immediate medical attention.****Ingestion:**

For advice, contact the National Poisons Centre: 0 800 764 766 or a doctor (at once). Do NOT induce vomiting. Immediately rinse mouth and drink a cupful of water. Never give anything by mouth to an unconscious person. Get medical attention immediately. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Information for doctor:** Treat Symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

**Most important symptoms and effects, both acute and delayed**

Contact with this material may cause burns to the eyes. Symptoms include itching, burning, redness, and tearing of eyes. Prolonged or repeated contact with the product may cause irritation of skin. Itching, redness, burning of skin. Edema. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

**Danger**

Brazing hazards are complex and may include physical and health hazards such as but not limited to infrared radiation from flame or hot metal, physical strains, thermal burns due to hot metal or spatter and potential health effects of overexposure to brazing fume or dust. Refer to Section 11 for more information.

**5 Fire-fighting measures****Extinguishing media**

Do not use water jet as an extinguisher, as this will spread the fire.

**Special hazards arising from the substance or mixture**

During fire, hazardous combustion products are released that may include: Hydrogen fluoride, fluorine-, boron- and potassium-containing compounds.

**Advice for firefighters**

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Firefighting Equipment/instructions:** Move containers from fire area if you can do so without risk.

**Specific methods:** Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards:** No unusual fire or explosion hazards noted.

#### **Additional information**

Read and understand the Work Safe Australia and New Zealand Code of Practice on Welding Processes and "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" before using this product. Section 274 of the Work Health and Safety Act (the WHS Act.)

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## **6 Accidental release measures**

### **Personal precautions, protective equipment and emergency procedures**

Keep unnecessary personnel away. Avoid inhalation of dust from the spilled material. Wear protective clothing as described in Section 8 of this SDS. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

### **Environmental precautions:**

Prevent further leakage or spillage if safe to do so. Do not contaminate water.

### **Methods and material for containment and cleaning up:**

This product is miscible in water. Dike far ahead of spill for later disposal. Consider igniting spill or leak to eliminate toxic gas concerns. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner equipped with HEPA filter. Should not be released into the environment. Prevent product from entering drains. Do not allow material to contaminate ground water system.

**Large Spills:** Sweep up and place into a proper container for disposal. Avoid the generation of dusts during clean-up.

**Small Spills:** Wipe up spilled material and place in a suitable container for disposal.

Never return spills in original containers for re-use. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination. This material and its container must be disposed of as hazardous waste. For waste disposal, see Section 13 of the SDS.

### **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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## **7 Handling and storage**

### **Handling:**

#### **Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid inhalation of vapors and spray mists. Avoid contact with eyes, skin, and clothing. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment (See Section 8). Wash thoroughly after handling. Avoid release to the environment. Read and understand the manufacturer's instruction and the precautionary label on the product.

**Conditions for safe storage, including any incompatibilities****Storage:**

Store locked up. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS). Store in tightly closed original container in a dry, cool and well-ventilated place. Do not store in container made of glass or silicate-based material.

**8 Exposure controls/personal protection**

**Additional information about design of technical systems:** No further data; see item 7.

**Control parameters****Exposure Guidelines:**

Follow standard monitoring procedures. No exposure standards allocated.

Refer to the Safe Environments risk management document – Welding Fume -

<http://www.safeenvironments.com.au/welding-fume/> The exposure standard refers to the publication by Work Safe Australia “Workplace Exposure Standard for Airborne Contaminants” with the Date of Effect being 22 December 2011. Work Safe Australia note that “exposure standards do not represent a fine dividing line between a healthy and unhealthy work environment. Natural biological variation and the range of individual susceptibilities mean that a small number of people might experience adverse health effects below the exposure standard.

Exposure Standards					
CAS	Ingredient	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>
7647-01-0	Hydrochloric Acid	5ppm	7.5		
7646-85-7	Zinc Chloride		1	2	

Refer to Worksafe Australia for standards:

[http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/639/Workplace\\_Exposure\\_Standards\\_for\\_Airborne\\_Contaminants.pdf](http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/639/Workplace_Exposure_Standards_for_Airborne_Contaminants.pdf)

**Exposure controls****Personal protective equipment:****General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Do not eat, drink or smoke when using the product. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. Personal air monitoring is generally undertaken over a representative period of time undertaken to Australian Standard AS 3640-2009 Workplace atmospheres – Method for sampling and gravimetric determination of inhalable dust using IOM sampling heads with flow rate of 2.0 L/min. Keep away from foodstuffs, beverages and feed.

**Engineering controls:** No further relevant information available.

**Ventilation**

Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of dust. Shower, hand and eye washing facilities near the workplace are recommended.

**Breathing equipment:**

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a respirator when local exhaust or ventilation is not adequate to keep exposures below the TLV. In a confined space a supplied respirator may be required.

**Protection of hands:**

Wear protective gloves (i.e. latex, nitrile, neoprene).

**Eye protection:**

Wear safety glasses with side shields (or goggles).

**Body protection:** Chemical resistant clothing is recommended.



## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

<b>Appearance:</b>	Clear, Pale Yellow Liquid
<b>Colour:</b>	
<b>Odour:</b>	Characteristic Odour
<b>Odour Threshold:</b>	Not Available
<b>pH-value:</b>	<1

#### Change in condition

<b>Melting point/Melting range:</b>	Not Available
<b>Boiling point/Boiling range:</b>	Not Available

<b>Flash point:</b>	Not Available
<b>Evaporation rate:</b>	Not Available
<b>Flammability (solid, gaseous):</b>	Not flammable

<b>Explosion Properties:</b>	Not Explosive
<b>Oxidizing Properties:</b>	Not Oxidizing

<b>Vapour Pressure:</b>	Not Available
<b>Relative Density:</b>	Not Available
<b>Relative Density Temperature:</b>	Not Available
<b>Specific Gravity:</b>	Not Available
<b>Vapour Density:</b>	Not Available
<b>Auto-Ignition:</b>	
<b>Decomposition Temp:</b>	Not Available

<b>Solubility in/Miscibility with water:</b>	Soluble
<b>Partition coefficient (n-octanol/water):</b>	Not Available
<b>Viscosity:</b>	
<b>Other Information:</b>	No further relevant information available

## 10 Stability and reactivity

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Swallowed Swallowing can result in nausea, vomiting, diarrhea, abdominal pain and chemical burns to the gastrointestinal tract.

Eye Contact Corrosive to eyes, contact can cause corneal burns.

Contamination of the eyes can result in permanent injury.

Skin Contact Corrosive to skin – may cause skin burns.

Inhaled Vapour is an irritant to mucous membranes and respiratory tract. May cause coughing, choking and inflammation and ulceration of the respiratory tract.

Long Term Effects Repeated or long term exposure to acid vapours may have effects on the lungs, resulting in chronic bronchitis.

Toxicological Data No LD50 data available for the product.

However for constituents:

Hydrogen chloride: Acute Oral LD50 (rat): >900mg/kg

Acute Inhalation LC50 (rat): 3124 ppm/1hr

Zinc chloride: Acute Oral LD50 (rat): 350mg/kg

## 11 Toxicological information

Toxicity				
CAS	Ingredient	Oral Toxicity LD50	Intravenous Toxicity LD50	Inhalation Toxicity LD50
7647-01-0	Hydrochloric Acid	>200mg/kg (rat)		
7647-85-7	Zinc Chloride	3500-4100 mg/kg (rat)		

### Information on toxicological effects:

#### Acute toxicity:

Toxic if swallowed

#### Skin Contact:

Prolonged or repeated contact may dry skin and cause irritation. Harmful in contact with skin. Hydrogen fluoride, a possible decomposition product, is extremely corrosive and a poison by all routes of entry.

Hydrogen fluoride can penetrate the skin and produce burns, which may not be immediately painful or visible; the burns impact the lower layers of skin and bone tissue. Hydrogen fluoride exposures involving 20 percent of the body or more can be fatal through systemic fluoride poisoning.

#### Eye Contact:

May cause eye burns. Risk of serious damage to eyes.

**Ingestion:**

Harmful if swallowed. Ingestion may produce burns to the lips, oral cavity, upper airway, oesophagus and possibly the digestive tract.

**Inhalation:**

Harmful by inhalation. Dust may irritate respiratory system.

**Respiratory or skin sensitization:**

Knowledge about sensitization hazard is incomplete.

Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Knowledge about sensitization hazard is incomplete.

**Mutagenicity:**

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity:**

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**Reproductive:**

Suspected of damaging the unborn child by ingestion. Possible reproductive hazard. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility and sterility by repeated ingestion.

**STOT – single exposure:**

Not classified.

**STOT – repeated exposure:**

Knowledge about health hazard is incomplete.

**Chronic effects:** Prolonged exposure may cause chronic effects. May cause damage to the kidneys. Exposure to extremely high levels of fluorides can cause abdominal pain, diarrhea, muscular weakness, and convulsions. In extreme cases it can cause loss of consciousness and death. Prolonged overexposure to fluorides may increase fluoride content of bones and teeth, and may result in fluorosis, with mottling of teeth (in children) and brittleness of bones.

**Further Information:** Symptoms may be delayed.

## 12 Ecological information

**Ecotoxicity:**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts of the product may affect the acidity (pH-factor) in water with possible risk of harmful effects to aquatic organisms.

**Persistence and Degradability:** No data is available on the degradability of this product

**Bioaccumulative Potential:** No data is available on the degradability of this product

**Mobility in soil:** No data is available on the degradability of this product

**Other adverse effects:** No data is available on the degradability of this product

## 13 Disposal considerations

**Waste treatment methods****Disposal Instructions:**

This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

**Hazardous waste code:** D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel]

**Uncleaned packagings:**

**Recommendation:** Empty containers should be taken to an approved waste handling site for recycling or disposal.



## 14 Transport Information



	LAND TRANSPORT ADG	SEA TRANSPORT IMDG/IMO	AIR TRANSPORT IATA/ICAO
UN-Number ADG, IMDG/IMO, IATA/ICAO	3287	3287	3287
UN proper shipping name ADG, IMDG/IMO, IATA/ICAO	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.
Transport hazard class(es) ADG, IMDG/IMO, IATA/ICAO	6.1	6.1	6.1
Packing group ADG, IMDG/IMO, IATA/ICAO	III	III	III
Environmental hazards: Marine pollutant:	No information provided		
Special precautions for user			
Additional Information			
Hazchem code.			
GTEPG			
EMS			

## 15 Regulatory information

**Product Name:** WELDbraze® Soldering Flux

**Safety, health and environmental regulations/legislation specific for the substance or mixture:**

Refer to the Australian Inventory of Chemical Substances – AICS at <https://www.nicnas.gov.au/chemicals-on-AICS#main>

**Poison Schedule:**

Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).  
<https://www.legislation.gov.au/Details/F2016L01638>

**Classifications:**

Safework Australia and Worksafe New Zeland criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

Refer to the New Zealand Inventory of Chemical Substances at <https://www.hazardoussubstances.govt.nz/calculator>

**Poison schedule:** Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP). <https://legislation.govt.nz/bill/government/2006/0103/latest/DLM1048069.html>

**Classifications:** Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

## 16 Other information

### References

Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice

Environmental Protection Authority of New Zealand

Australian Code for the Transport of Dangerous Goods by Road & Rail.

Modell Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

Workplace exposure standards for airborne contaminants, Safe work, Australia

American Conference of Industrial Hygienists (ACGIH)

Globally Harmonised System of classification and labelling of chemicals.

**WELDING (1):** Due to the diversity of welding techniques, processes, materials used, nature of the surface being welded and the presence of contaminants, the fumes & gases associated with welding will vary in composition and quantity. When assessing a welding process, the toxic fumes generated may not only be associated with the parent metal, filler wire or electrode. The welding/cutting arc may generate nitrogen oxides, carbon monoxide & other gases, whilst UV radiation emitted from some arcs generates ozone. Ozone may irritate mucous membranes and cause pulmonary oedema & haemorrhage. Shielding gases (e.g. carbon dioxide and inert gases i.e. argon and helium) in high concentrations, in confined spaces, may reduce oxygen in the atmosphere to dangerous levels, resulting in possible asphyxiation.

**WELDING (2):** In addition to complying with individual exposure standards for specific contaminants, where current manual welding processes are used, the fume concentration inside the welder's helmet should not exceed 5 mg/m<sup>3</sup> ( unless otherwise classified) when collected in accordance with Australian Standard AS 3853.1: Fume from welding and allied processes - Guide to methods for the sampling and analysis of particulate matter and AS 3853.2: Fume from welding and allied processes - Guide to methods for the sampling and analysis of gases. Airway irritation and metal fume fever are the most common acute effects from welding fumes. Reported to cause reduced sperm quality in welders.

**WELDING (3):** Other gases and fumes associated with welding processes include: Inert shielding gases (e.g. argon, carbon dioxide, helium) which may reduce the atmospheric oxygen content in poorly ventilated areas. UV-radiation and Infra-Red radiation may decompose chlorinated degreasing agents to form highly toxic and irritating phosgene gas. This may occur if a metal has been degreased but inadequately dried or when vapours from a nearby degreasing bath enter the welding zone.

**WELDING (4):** Welding fumes may contain a wide variety of chemical contaminants, including oxides and salts of metals and other compounds which may be generated from electrodes, filler wire, flux materials and from the welded material (e.g. painted surfaces). Welding stainless-steel and its alloys generates nickel and

chromium (VI) compounds. Welding fumes are retained in the lungs. Sparingly soluble compounds may be released slowly from the lungs. Welding fume is classified as possibly carcinogenic to humans (IARC Group 2B).

**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

**Disclaimer:**

We urge each end user and recipient of this SDS to study it carefully. If necessary, consult an industrial hygienist or other expert to understand this information and safeguard the environment and protect workers from potential hazards associated with the handling or use of this product.

GWS cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for use, handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

**WARNING: PRODUCT COMPONENTS PRESENT HEALTH AND SAFETY HAZARDS. READ AND UNDERSTAND THIS SAFETY DATA SHEET (SDS). ALSO, FOLLOW YOUR EMPLOYER'S SAFETY PRACTICES.**

The information contained herein relates only to the specific product. If the product is combined with other materials, all component properties must be considered. **BE SURE TO CONSULT THE LATEST VERSION OF THE SDS. MATERIAL SAFETY DATA SHEETS ARE AVAILABLE FROM** Global Welding Supplies Ltd (GWS), 13 Patiki Road, Avondale, Auckland NZ 1026, Phone: +64 9 828 9888 Email: sales@gwsnz.co.nz and downloadable via [www.globalweldingsupplies.co.nz](http://www.globalweldingsupplies.co.nz) website, **STATEMENT OF LIABILITY-DISCLAIMER**

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[ End of SDS ]